



Mark Carwardine's **AT A GLANCE...**

30

PLASTIC IN THE OCEANS

WHAT'S ALL THE FUSS ABOUT?

Cheap, durable, lightweight and malleable, plastic has revolutionised almost every aspect of our lives. But it has come at a staggering cost. Some 335 million tonnes of plastic is produced every year – and at least 8 million tonnes of it enters the world's oceans. It is already the commonest marine pollutant and recent estimates suggest, in terms of weight, oceans will contain more plastic than fish by 2050.

WHERE DOES THE PLASTIC COME FROM?

There are two main sources. First, there are large items such as bottles, drinking straws and bags. In the UK alone we throw away 38.5 million plastic bottles (about half are recycled), nearly 7 million disposable coffee cups and 22 million plastic straws every day. Second, there are so-called microplastics – ranging from microscopic particles to bits the size of a sesame seed – which simply wash down drains into rivers and seas. Microplastics are formed when larger items break down, or they are manufactured as 'microbeads' for use in everything from toothpaste and make-up to detergents and cleaners. The use of microplastics has increased 20-fold in the past 50 years, and is expected to double again over the next 20.

WHAT HARM DOES IT CAUSE?

We're not entirely sure, because this is a relatively new field of study. Larger items

are frequently mistaken for food and eaten, causing turtles, seabirds and many other animals to choke or, ultimately, starve. Microplastics are known to affect reproductive success and growth rates, and are likely to impact other biological functions. Another concern is that chemical toxins attach to microplastic particles and enter the food chain when they are ingested. The risk to people remains unknown, but there are warning signs: it's been estimated that an average European seafood consumer ingests 11,000 plastic particles a year.

SO WHAT'S BEING DONE?

We need to produce less plastic, reuse what we have, and recycle what's left – rather than using it once and throwing it away. After decades of inaction many countries are finally taking notice. In 2015, President Obama signed the Microbead-Free Waters Act, banning plastic microbeads in cosmetic and personal care products. In the UK, there are proposals for a deposit scheme for plastic bottles and banning plastic straws, and there is even talk of a 'plastic tax'. Such endeavours can work: the 5p charge on plastic bags, introduced in Wales in 2011, Scotland in 2014 and England in 2015, has been credited with vastly reducing plastic bag use, by 85% in the latter alone. Some companies are acting independently, too:



Plastics that don't biodegrade can choke, entangle and poison sea life.

Waitrose plans to remove all disposable coffee cups from its shops by this autumn (saving more than 52 million cups a year).

IS IT REALLY THAT EASY?

No. Plastic recycling is a complex and energy-demanding process – there are more than 50 different types of plastic to sort – and many products are virtually impossible to recycle. Single-use plastic bags clog up the sorting machines, for example, and plastic-lined coffee cups cannot be recycled by normal systems. Also, much of our plastic was being shipped to China, but it has now stopped accepting foreign waste. Another problem is that plastic-free isn't always more environmentally friendly – glass is much heavier and requires more energy to transport, for instance, while replacing petrochemical-made plastics with degradable bioplastics (made from corn starch or wood, for instance) requires a vast amount of agricultural land. Meanwhile, oil companies have recently poured £130bn into new plastic production facilities – and will fight attempts to reduce plastic use. Most importantly, Europe and the USA account for only 2% of the 8 million tonnes of plastics entering the oceans every year; the real challenge lies in Asia, which accounts for 82%. ❏

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MARK CARWARDINE is a frustrated and frank conservationist.

Every month he demystifies some of the most important issues affecting the world's wildlife and assesses the organisations that protect it.

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